UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/737,319	12/14/2000	Satoru Toguchi	1558-14	9502

7590 03/02/2004

LAFF, WHITESEL & SARET
401 North Michigan Avenue
Chicago, IL 60611

EXAMINER	
YAMNITZKY, MARIE ROSE	
ART UNIT	PAPER NUMBER
1774	

DATE MAILED: 03/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/737,319	TOGUCHI ET AL.	
	Examiner	Art Unit	
	Marie R. Yamnitzky	1774	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,7-12 and 14-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7-12 and 14-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. This Office action is in response to applicants' amendment received November 24, 2003. Applicants' remarks submitted in amendments filed prior to the November 24th amendment and subsequent to the Office action mailed June 09, 2003 have also been considered.

Claims 1-5, 7-12 and 14-24 are pending.

2. Claims 1-5, 7-12, 14-18, 23 and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The limitations imposed by the term "singly" as recited in line 4 of claim 1 are not clear, particularly in light of dependent claims 3-5 which require a layer of specified function to include the compound represented by general formula [1] "either singly or as a mixture".

The limitations imposed by the term "singly" as recited in line 3 of claim 7 are not clear, particularly in light of dependent claims 10-12 which require a layer of specified function to include the compound represented by general formula [1] "either singly or as a mixture".

Claim 16 also stands rejected under 35 U.S.C. 112, second paragraph, because, as noted in the Office action mailed June 09, 2003, there is no antecedent basis for "R^{13} to R^{16}" as dependent from claim 1.

The limitations regarding the group with steric hindrance as set forth in claim 18 are not clear because claim 18 includes a broad definition of the group with steric hindrance (as set forth in the second-sixth lines from the end of the claim) and a narrow definition of the group with steric hindrance (as set forth in the last line of the claim). If the group with steric hindrance is

intended to be limited to the narrow definition, then the second-sixth lines from the end of claim 18 should be deleted.

Claim 23 recites "R^1 to R^{12}" four times in defining a formula that does not contain R^1 to R^{12}.

Claim 24 requires "at least one" R variable to be a diarylamino group while depending from claim 23 which requires "at least one and at most two" R variables to be a diarylamino group. It is not clear if claim 24 is improperly attempting to broaden the limitation regarding the number of diarylamino groups.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-5 and 19-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Toguchi et al. (US 2003/0134145 A1).

The applied reference has a common inventor with the instant application, but a different inventive entity. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the

reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

See the whole published application, especially formula (1)-16 on page 10 and paragraphs [0040]-[0041]. Note that the generic formula (1) as depicted throughout the publication contains an obvious error in that one of the bonds necessary to form the perylene ring structure is missing. The specific formulae (1)-1 through (1)-16 show the correct perylene ring structure.

The compound represented by prior art formula (1)-16 is a compound of present general formula [1] wherein each of R^1, R^6, R^7 and R^{12} represents a non-substituted aryloxy group, thus meeting the requirement for a group with steric hindrance, each of R^4 and R^9 (or R^3 and R^{10} given the symmetry of perylene) represents a diarylamino group of the formula $-NAr^1Ar^2$ in which each of Ar^1 and Ar^2 represents a substituted aromatic hydrocarbon group, and each of the remainder of R^1-R^{12} represents a hydrogen atom. In one of the two diarylamino groups, both Ar^1 and Ar^2 have a substituted styryl group as a substituent and in the other of the two diarylamino groups, one of Ar^1 and Ar^2 has a substituted styryl group as a substituent.

As taught in the prior art, the perylene compound can be used in a hole-transporting layer, a light-emitting layer or an electron-transporting layer of an organic EL device, and can be used in the layer alone or in a mixture with another material.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1, 3-5 and 14-16 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Tamano et al. (US 6,329,084 B1) for reasons of record in the Office action mailed June 09, 2003.

Claims 19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamano et al. (US 6,329,084 B1) as applied to claims 1, 3-5 and 14-16 in the Office action mailed June 09, 2003.

The rejection of claims 1, 3-5 and 14-16 is maintained subject to clarification of the limitations imposed by present claim 1's recitation of "singly" in view of the recitation in present claims 3-5 of "either singly or as a mixture".

Tamano et al. suggest compounds within the scope of a compound of formula [1] as defined in claims 1, 19 and 21 having two diarylamino substituents wherein the compound is used in combination with another perylene compound outside the scope of a compound of formula [1].

7. Claims 1, 3-5 and 14-16 stand rejected under 35 U.S.C. 103(a) as being unpatentable over JP 11-144869 for reasons of record in the Office action mailed June 09, 2003.

Claims 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 11-144869 as applied to claims 1, 3-5 and 14-16 in the Office action mailed June 09, 2003.

8. Claims 1-5, 7-12 and 14-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 11-185961 as applied to claims 1-5 and 7-12 in Paper No. 5 (the Office action mailed December 03, 2002) and the additional reasons set forth below.

Claim 18 is included in this rejection subject to clarification as to whether the group with steric hindrance is limited to the broad definition or the narrow definition. The prior art suggests compounds having a group that meets the broad definition regarding the group with steric hindrance.

Subsequent to Paper No. 5, claims 1 and 7 were amended to require any alkyl group used as the group with steric hindrance to be an alkyl group having not less than four carbon atoms. A partial machine-assisted translation of the reference (previously provided to applicants) shows that the prior art discloses alkyl groups having four or more carbon atoms (paragraph [0022]). With respect to the group with steric hindrance as defined in claims 14-17, the prior art specifically discloses t-butyl, t-butoxy and phenyloxy as possible substituents (paragraphs [0022], [0026] and [0036]).

9. Claims 1-3, 7-10 and 14-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 10-88120 as applied to claims 1-3 and 7-10 in Paper No. 5 (the Office action mailed December 03, 2002) and for the additional reasons set forth below.

Claim 18 is included in this rejection subject to clarification as to whether the group with steric hindrance is limited to the broad definition or the narrow definition. The prior art suggests

compounds having a group that meets the broad definition regarding the group with steric hindrance.

Subsequent to Paper No. 5, claims 1 and 7 were amended to require any alkyl group used as the group with steric hindrance to be an alkyl group having not less than four carbon atoms. The prior art discloses alkyl groups having four or more carbon atoms. With respect to the group with steric hindrance as defined in claims 14-17, the prior art specifically discloses t-butyl, t-butoxy and phenoxy (phenyloxy) as possible substituents. See p. 14 of the previously provided translation.

10. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

11. Claims 1-5, 7-12 and 18-24 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-17 of U.S. Patent No. 6,329,083 B1 as applied to claims 1-5 and 7-12 in Paper No. 5 (the Office action mailed December 03, 2002).

Claim 18 is included in this rejection subject to clarification as to whether the group with steric hindrance is limited to the broad definition or the narrow definition.

12. Applicants' arguments filed September 15, 2003 have been fully considered but they are not persuasive.

With respect to the rejection of claim 16 under 35 U.S.C. 112, second paragraph as set forth in the previous Office action, claim 16 has not been amended to overcome the rejection.

With respect to the rejection based on US 6,329,084 to Tamano et al., the claims have not been amended in the manner argued by applicants (deletion of "alkyl group, alkoxy group, aryloxy group and aromatic group"; leaving "'cycloalkyl group' and 'aralkyl group' when the perylene compounds are used in combination with other compounds.")

Applicants also argue that each of the references does not teach the effect of a group with steric hindrance. While the applied prior art references (with the exception of newly applied US 2003/0134145 A1) do not disclose an example of a specific perylene or benzoperylene compound having a group with steric hindrance as defined in the present claims, the prior art references disclose perylene compounds and/or benzoperylene compounds which may be substituted with a variety of substituents, many of the suggested substituents meeting the limitations of a group with steric hindrance. It is the examiner's position that the data set forth in the present specification do not demonstrate superior/unexpected results commensurate in scope with the rejected claims.

13. Miscellaneous:

In line 2 of each of claims 2 and 9, --A^1-- should read --Ar^1--. This error was introduced by applicants' amendment.

In claims 7, 18 and 23, "(2) [2]" to the right of the formula should be changed to --[2]--.

The last word of claim 17 should read --phenyloxy--. The misspelling was introduced by applicants' amendment.

In the third line after formula [2] in claim 18, "[aklyl]" should be deleted. 37 CFR 1.121 currently requires the use of strikethrough or double brackets to indicate deletions.

In the penultimate line of claim 20, "used in alone" is grammatically incorrect.

In the second line of claim 24, "-Nar^1Ar^2" should read -- -NAr^1Ar^2 --.

14. Applicant is advised that should claim 1 be found allowable, claim 20 may be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. Should claim 23 be found allowable, claim 24 may be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Depending upon the limitations imposed by the term "singly" in claim 1, claim 20 may be a substantial duplicate of claim 1 since claim 20 requires the compound to be used "alone and not in combination with other compounds".

Upon correction of claim 23 to read "R^{13} to R^{26}" instead of --R^{1} to R^{12}--, and presuming claim 24 is not attempting to improperly broaden the limitation regarding the number of diarylamino groups, claim 24 will be a substantial duplicate of claim 23.

15. Any inquiry concerning this communication should be directed to Marie R. Yamnitzky at telephone number (571) 272-1531. The examiner works a flexible schedule but can generally be reached at this number from 6:30 a.m. to 4:00 p.m. Monday, Tuesday, Thursday and Friday, and every other Wednesday from 6:30 a.m. to 3:00 p.m.

The current fax number for Art Unit 1774 is (703) 872-9306 for all official faxes. (Unofficial faxes to be sent directly to examiner Yamnitzky can be sent to (571) 273-1531.)

MRY
February 20, 2004

Marie R. Yamnitzky

MARIE YAMNITZKY
PRIMARY EXAMINER
1774